Paola Romero

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EDUCATION

Massachusetts Institute of Technology (MIT) **Class of 2027**

- Candidate for B.S. in Mechanical Engineering. Minor in Music *Cambridge, MA*
- Involvements: Soft Robotics Research (FIDL group), Assistant Shop Manager for Edgerton Center Student Project Lab, Climbing Club, MIT Wind Ensemble
- Relevant Courses: Design and Manufacturing, Dynamics and Controls, Thermal-Fluids Engineering, Numerical Computation, Mechanics and Materials (Statics), Differential Equations

EXPERIENCE

Center of Innovation and Manufacturing at UPC **Jun. 2025-Aug. 2025**

Research Intern *Barcelona, Spain*

- Designed and prototyped a 6 m scale model of a 24 m post-tensioned concrete bridge in **SolidWorks**, including **FEA simulations** and **hand calcs** to validate performance under a 200 kN tensioning force and live loads.
- Created a novel **modular mating system** to join four 1.5m bridge sections, integrating mechanical precision with architectural requirements

Campos Engineering **Jun. 2024-Aug. 2024**

Innovation Intern *Dallas, TX*

- Assembled and tested dozens of **SMT PCBs**, identifying and correcting errors to cut debugging time by **52%** and improve quality control.
- Developed a **LoRaWAN IoT network** on **TTN + AWS**, enabling live pressure/temperature sensor data analysis.
- Designed **"Tulip," a 3D-printed electronics enclosure** for Flowmonster's air velocity grid, optimizing airflow and reducing assembly time through rapid prototyping.
- Built a **custom MIG-welded steel lift** for Flowmonster, rated for 40 kg load, ensuring durability and safety.
- Created the **gateway PCB** in KiCad—schematic, layout, routing, and component selection for signal reliability.
- Utilized **SLA/FDM 3D printing** (Anycubic & Elegoo), from setup to troubleshooting for high-precision prototyping.

Campos Engineering **Jun. 2023-Jul. 2023**

Innovation Intern *Dallas, TX*

- Programmed **Digi XBee 3** modules in **MicroPython** for temperature/humidity monitoring; soldered **30+ sensor PCBs** and identified HVAC malfunctions in Campos Engineering's Dallas office.
- Iterated on 1mm wide **airtight seals** for airflow instruments, reducing manufacturing cost by **95%.**
- Developed firmware for **RAK 3172 microprocessors** using Arduino IDE, enabling **LoRa P2P communication** for distributed humidity/temperature sensing across **15+ devices**.
- Designed a **3D-printed wireless pressure sensor case**, cutting sensor cost by **68%** and streamlining assembly.
- Used **Fusion 360 + LulzBot 3D printers** to prototype **3 custom tools** and components.

ENGINEERING PROJECTS

- **Wall Climbing Robot** - final project for Design and Manufacturing I (2.007).
- Autonomous Line Following Robot - final project for Intro to Autonomous Machines. Used **PID control**.
- Passive Speaker - Used **CNC machining** to create a wooden passive speaker

SKILLS

- **Engineering:** Autodesk Fusion360, SolidWorks, Onshape, Fusion CAM, Solidworks FEA, SLA 3D Printing, Miter Saw, Mill, Lathe, MIG Welding, and Power Tools
- **Computer:** Arduino (C++), Python, MicroPython, MATLAB
- Fluent in English and Spanish